

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

G37EU Revision 2 ROLLADEN SCHNEIDER FLUGZEUGBAU GmbH Model LS-3 LS 3-A March 13, 1980

TYPE CERTIFICATE DATA SHEET NO. G37EU

This data sheet which is a part of type certificate No. G37EU prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder	Rolladen Schneider Flugzeugbau GmbH 6073 Egelsbach Muhlstrasse 10 Federal Republic of Germany
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I - Model LS3, approved January 6, 1978

Airspeed limits (I.A.S.)

Never Exceed (Vne)				
(0 - 9,800 ft. alt.)	270 km/h	168 mph	146 kts	
(9,800 -19,700 ft.)	227 km/h	141 mph	123 kts	
(19,700 - 32,800 ft.)	180 km/h	112 mph	97 kts	
In rough air (Vb)	190 km/h	118 mph	103 kts	
Maneuvering (Va)	190 km/h	118 mph	103 kts	
Flaps Down (Vfe)	190 km/h	118 mph	103 kts	
Aero-tow (Vt)	190 km/h	118 mph	103 kts	
Winch tow (Vw)	130 km/h	81 mph	70 kts	
Dive brakes	270 km/h	168 mph	146 kts	
Landing gear (Vl)	270 km/h	168 mph	146 kts	

Control surface movements

Elevator				
	Up			2.20 ± 0.2 in. (radius 5.71 in.)
	Down			2.20 ± 0.2 in. (radius 5.71 in.)
Aileron, at flap position + 10°, full down				
	Up			2.17 ± 0.2 in. (radius 10.94 in.)
	Down			1.57 ± 0.2 in. (radius 10.94 in.)
Flaps, initial position + 10°, full down				
	Up			3.23 ± 0.2 in. (radius 10.94 in.)
Rudder				
	Right			7.28 ± 0.39 in. (radius 14.25 in.)
	Left			7.28 ± 0.39 in. (radius 14.25 in.)
Dive Brake, at inner lever				
	Up			6.65 ± 0.12 in.

Radius measured as a chord at root with movement
measured at trailing edge. (See Service Manual).

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II - Model LS3-A, approved March 13, 1980

Airspeed limits (I.A.S.)

Never Exceed (Vne)			
0 - 9,800 ft. alt.	270 km/h	168 mph	146 kts
9,800 - 19,700 ft. alt.	219 km/h	136 mph	118 kts
19,700 - 32,800 ft. alt.	173 km/h	107 mph	93 kts
In rough air (Vb)	190 km/h	118 mph	103 kts
Maneuvering (Va)	190 km/h	118 mph	103 kts
Flaps Down from 20° to 10°	160 km/h	99 mph	86 kts
Flaps Down from 10° to 0°	190 km/h	118 mph	103 kts
Flaps Down from 0° to -7°	270 km/h	168 mph	146 kts
Aero-tow (Vt)	190 km/h	118 mph	103 kts
Winch tow (Vw)	130 km/h	81 mph	70 kts
Dive brakes	270 km/h	168 mph	146 kts
Landing gear (Vl)	270 km/h	168 mph	146 kts

Control surface movements

Elevator	Up	350 ± 5 mm (13.78 ± 0.2 in.)
	Down	245 ± 5 mm (9.65 ± 0.2 in.)
		Radius 148 mm (5.83 ± 0.2 in.), distance of reference point on fin 300 mm (11.81 in.)
Rudder		To both sides 6.89 ± 0.39 in.
		Radius 12.20 in.
Aileron at flap position + 10°		
	Up	$16^\circ \pm 3^\circ$
	Down	$-13^\circ \pm 3^\circ$
Flaps		
	Up	$17^\circ \pm 3^\circ$
	Down	$-5^\circ \pm 3^\circ$
		Further details regarding permissible deflections of ailerons and flaps are given in the Maintenance Manual LS3-A.
Dive Brake		Up 160 ± 10 mm (6.30 ± 0.39 in) at inner lever.

III. DATA PERTINENT TO ALL MODELS:

C.G. range	250 mm (+9.85 in) to 400 mm (+15.75 in) aft of datum.
Empty weight C.G.	See Service Manual
Datum	Leading edge of wing at root
Leveling means	Under side of fuselage boom placed horizontal.
Maximum weight	472 Kg (1040 lb) including water ballast.
No. of seats	1, adjustable seat back, with seat location at station 590 mm (+23.23 in.) forward of datum.
Water Ballast	2 wing water bags, each 75 liters (75 kg) (166 lb.) at station 250 mm (+9.85 in.) aft of datum.

III. DATA PERTINENT TO ALL MODELS: (Cont'd)

Fixed Ballast	Fixture for 3 ballast weights of 2.45 kg. each (5.5 lb.) at station 1690 mm (+66.5 in.) forward of datum, compensating 5 kg. (11.3 lb.) each at seat position.
Baggage	Maximum 11 lb. at station 200 mm (+7.87 in.) aft of datum.
Rated Load for Winch and Aero Tow	Maximum 600 kg (1325 lb.)
Serial Numbers Eligible	See Import Requirements
Certification Basis	FAR 21.23 and FAR 21.29 effective February 1, 1965. Airworthiness Requirements for sailplanes and powered sailplanes (LFSM). dated October 1975. Type Certificate No. G37EU, issued January 6, 1978. Date of Application for Type Certificate: April 15, 1977.
Validation Basis	Type Certificate No. G37EU was issued in accordance to FAR 21.29(a)(1) in validation of Luftfahrt-Bundesamt (LBA) certification of compliance to the Federal Republic of Germany Sailplanes and Powered Sailplanes Airworthiness Requirements (LFSM) dated October 1975.
Import Requirements	A U.S. Airworthiness Certificate may be issued on the basis of a Certificate of Airworthiness for Export signed by a representative of the Luftfahrt-Bundesamt, containing the following statement: "The glider covered by this certificate has been examined, tested, and found to conform to the type design approved under FAA Type Certificate No. G37EU and is in condition for safe operation". Model LS-3 serial nos 3002 through 3319 are eligible for a U.S. Standard Airworthiness Certificate when all actions or modifications have been accomplished in accordance with LBA-approved Rolladen Schneider Technical Bulletin 3011. Model LS3-A serial numbers 3259, 3274, 3280,3281, 3287, 3305, 3314, 3315, 3324 to 3328, 3332, 2249 to 3355, 3357, 3359, 3373 to 3378, 3398, 3399, 3401, 3422, 3423 are eligible for a U.S. Standard Airworthiness Certificate when all actions or modifications have been accomplished in accordance with LBA approved Rolladen-Schneider Technical Bulletin.
Equipment	The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the glider for certification. As listed in Service/Maintenance Manual the following equipment must be installed. <ol style="list-style-type: none"> 1. Non-cloud flying <ul style="list-style-type: none"> - Airspeed indicator - Altimeter - Magnetic compass 2. Cloud flying <ul style="list-style-type: none"> - Turn and slip - Variometer 3. LS-3/LS 3-A Flight and Service/Maintenance Manual approved by the Luftfahrt-Bundesamt (LBA) West-Germany.

NOTE 1. Current weight and balance report including list of equipment in certificated empty weight, and loading instructions, when necessary, must be provided for each glider at the time of original certification.

NOTE 2. A. The following placard must be installed in full view of the pilot:

1. Airspeed Limits (I.A.S.)

Never Exceed (Vne)	270 km/h	168 mph	146 kts
In rough air (Vb)	190 km/h	118 mph	103 kts
Maneuvering (Va)	190 km/h	118 mph	103 kts
Flaps down (LS3) (Vfe)	190 km/h	118 mph	103 kts
20° - 10° (LS3A) (Vfe)	160 km/h	99 mph	86 kts
10° - 0°	190 km/h	118 mph	103 kts
Aero-tow (Vt)	190 km/h	118 mph	103 kts
Winch tow (Vw)	130 km/h	81 mph	70 kts
Dive brakes	270 km/h	168 mph	146 kts
Landing gear (Vl)	270 km/h	168 mph	146 kts
Airspeed Ind. (Vne)			
Vne up to 9,800 ft		168 mph	146 kts
19,700 ft (LS-3)		141 mph	123 kts
32,800 ft		112 mph	97 kts
Vne up to 9,800 ft		168 mph	146 kts
19,700 ft (LS-3A)		136 mph	118 kts
32,800 ft		107 mph	93 kts
2. Maximum weight 472 kg (1040 lb.) including water ballast.
3. LS3/LS-3A Checklist:
This sailplane must be operated in compliance with operating limitations as stated in the form of markings, placards and Flight Manual.

<p>LS-3</p> <ol style="list-style-type: none"> a. Lock main pins b. Lock horizontal tail c. Connect chute static line d. Lock dive brakes e. Flap positioning: Winch tow and Aero tow around 0° f. Test controls g. Lock canopy h. Check release 	<p>LS3-A</p> <ol style="list-style-type: none"> a. Lock main pins b. Lock horizontal tail c. Connect ailerons d. Test controls e. Fasten seat belt harness f. Connect chute static line g. lock dive brakes h. Flap positioning during takeoff: 0° i. Lock canopy j. Check release
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4. No aerobatic maneuvers approved.
5. Minimum cockpit load...kg (without fixed ballast) (See Flight Manual page 1.6 and 1.7)

B. Other markings and placards.

1. Cockpit signs (See Service/Maintenance Manual).

NOTE 3. All external portions of the glider exposed to sunlight must be painted white except of wingtips, nose of fuselage and rudder.

NOTE 4. Maintenance, Inspection and Repairs must be accomplished with Rolladen-Schneider Flugzeugbau GmbH LS3/LS 3-A Flight and Service/Maintenance Manual as applicable.

NOTE 5. Major repairs must be accomplished at FAA certificated repair stations rated for Fiberglass Reinforced Plastic (FRP) work, in accordance with repair methods approved by Rolladen-Schneider Flugzeugbau GmbH.

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